

PROPOSAL FOR COURSE CHANGE

To: Curriculum Committee

From: Computer and Information Science

Date submitted: October 1, 2008

Request for: Course changes X Course deletion Course Addition
(Excluding course credit hour changes)

Submitted by: Ron Robison

Approved by: Department Head: Ron Robison
Dean of School: Dr. Willy Hoefler

Reviewed by: Registrar: *Gammyluodes*
Vice President:

I. These changes are being proposed in order to update the catalog so that it more accurately reflects the intentions and objectives of the department.

a. **COMS 1003 Introduction to Computer-Based Systems**

Proposed change: Rewrite last three sentences for clarification.

Old Description: Provides students with both computer concepts and hands-on applications. Although little or no prior computer experience is required for this course, keyboarding proficiency is assumed. Topics include PC basics, file maintenance, and hardware and software components. Students will also gain experience in the use of several popular software applications including Windows, e-mail, Internet, word processing, spreadsheets, databases, presentation packages, and integration of these applications. May not be taken for credit after completion of COMS 2003 or BUAD 2003. Advanced placement and credit by examination are available to students who have previously studied Computer Science. Students may sit for the exam a maximum of three times.

Proposed Catalog Description: Provides students with both computer concepts and hands-on applications. Although little or no prior computer experience is required for this course, keyboarding proficiency is assumed. Topics include PC basics, file maintenance, and hardware and software components. Students will gain experience in the use of Windows, e-mail, the Internet, word processing, spreadsheets, databases, and presentation packages. The integration of software packages will also be covered. This course may not be taken for credit after completion of COMS 2003 or BUAD 2003. Credit by examination is offered to students who have notable experience with computers and MS Office applications. Information regarding this examination can be found at cs.atu.edu/coms1003.

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b. COMS 1333 Web Publishing I

Proposed change: Add prerequisite;
Rewrite description for clarification.

Old Description: This course introduces the student to the World Wide Web and design and development of web pages. Topics covered include HTML, images, style sheets, multimedia, CGI and forms, and other topics as appropriate. The students will learn how to publish a web site to a server and maintain the site. This course will focus on design issues.

Proposed Catalog Description: Prerequisite: COMS 1003 or BUAD 2003. This course focuses on how to develop web pages for display on the World Wide Web. Topics covered include markup languages, style sheets, links, images, multimedia, tables, forms, design issues, and other topics as appropriate. Students will learn how to publish a web site to a server and maintain the site. ✓

c. COMS 2003 Microcomputer Applications

Proposed change: Change prerequisite;
Rewrite last sentence.

Old Description: Prerequisite: COMS 1003 or pass entrance exam. This course provides hands-on experience with several software applications. Topics include intermediate and advanced word processing and desktop publishing features; spreadsheet design, formulas, and charts; database design principles and implementation; presentation design and techniques; and integration among these applications. Students will be required to apply each package on a semester project relation to their major.

Proposed Catalog Description: Prerequisite: COMS 1003 or BUAD 2003. This course provides hands-on experience with several software applications. Topics include intermediate and advanced word processing and desktop publishing features; spreadsheet design, formulas, and charts; database design principles and implementation; presentation design and techniques; and integration among these applications. Students will be required to apply each package on a semester project related to their major. ✓

d. COMS 2104 Foundations of Computer Programming I

Proposed change: Change co-requisite to co/prerequisite;
Rewrite description to clarify meaning.

Old Description: Prerequisite: COMS 1403, 1411 or consent of instructor. Corequisite: MATH 1113. An introduction to structured programming using C++. This is the beginning course in programming for majors in computer science, information systems and information technology. Programming principles taught in lecture are practiced in lab. Sequential, alternative, and iterative processing. Procedural abstraction and parameter mechanisms. Introduction to arrays, files, classes and records.

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Proposed Catalog Description: Prerequisite: Either COMS 1403 and COMS 1411 or consent of instructor. ~~Prerequisite:~~ MATH 1113. An introduction to structured programming using C++. This is the beginning programming course for students majoring in computer science, information systems, and information technology. Programming principles covered in lecture are practiced in lab. Major topics include sequential, selection, and iterative control structures, functions, parameter passing, and file processing. Arrays are introduced as a structured data type. ✓

e. COMS 2203 Foundations of Computer Programming II

Proposed change: Rewrite description for clarification.

Old Description: Prerequisite: MATH 1113 and passed COMS 2104 with a C or better. Topics include multi-dimensional arrays, functions, string processing, and an introduction to object-oriented programming.

Proposed Catalog Description: Prerequisite: MATH 1113 and completion of COMS 2104 with a grade equal to or greater than a C. Topics include multi-dimensional arrays, functions, string processing, classes, and records. Students are introduced to object-oriented programming using C++. ✓

f. COMS 2213 Data Structures

Proposed change: Change prerequisite

Old Description: Prerequisite: COMS 2203, and either COMS 2903 or MATH 2703. This course involves a study of abstract data structures and the implementation of these abstract concepts as computer algorithms.

Proposed Catalog Description: Prerequisite: COMS 2203 and COMS 2903. This course involves a study of abstract data structures and the implementation of these abstract concepts as computer algorithms. ✓

g. COMS 2223 Computer Organization and Programming

Proposed change: Update prerequisite

Old Description: Prerequisite: COMS 2203 and ENGR 2134. Covers computer architecture and machine-level programming in assembly language. Considerable practical experience will be gained through programming projects. Topics include internal data representation and manipulation, physical, and logical level input-output macros

Proposed Catalog Description: Prerequisite: COMS 2203 and ELEG 2134. This course covers computer architecture and machine-level programming in assembly language. Considerable practical experience will be gained through programming projects. Topics include internal data representation and manipulation as well as physical and logical level input-output macros. ✓

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h. COMS 2803 Programming in C

Proposed change: Rewrite description for clarification

Old Description: Corequisite: MATH 1113. Not for majors. Design, coding, debugging, and implementation of C programs. Introduction to the UNIX operating system.

Proposed Catalog Description: Co-requisite: MATH 1113. Not for majors. This course involves the design, coding, debugging, and implementation of programs using the C language. The UNIX operating system is introduced. May not be taken for credit after the successful completion of COMS 2104. ✓

i. COMS 2853

Proposed change: Change title;
Rewrite/update description

Old Title: COMS 2853 File Processing in COBOL

Old Description: Prerequisites: COMS 2203. Program design, development, testing, implementation, and maintenance in COBOL. Topics include file structures, batch file processing, and index file processing.

New Title: Business Application Programming using COBOL

Proposed Catalog Description: Prerequisite: COMS 2203. This course involves the analysis, design, development, testing, implementation, and maintenance of business application programs using the COBOL language. Topics include traditional data file organization, access, and processing methodologies. Additional topics include data validation, tables, sorting, searching, screen I/O, and report-based output. Programs are developed in PC and IBM mid-range computing environments. ✓

j. COMS 3603 Principles of Management Science

Proposed change: Change prerequisite;
Rewrite/update description

Old Description: Prerequisite: MATH 4003 or equivalent. Simplex method of linear programming, dual problem and sensitivity analysis, and integer programming. Emphasis is on application of these linear systems with case studies and examples from the areas of finance, marketing, and production. Large problem applications are run on the computer.

Proposed Catalog Description: Prerequisite: BUAD 2053 and junior standing. An introduction to management science analytical techniques, including such topics as the simplex method of linear programming, dual problem and sensitivity analysis, and integer programming. Emphasis is placed on the application of these methods using case studies and examples from the area of finance, marketing, and production. Applicable management science software will be used. ✓

k. **COMS 3903 Systems Software and Architecture**

Proposed change: Add prerequisite;
Rewrite description to clarify purpose

Old Description: This course covers the implementation of production operating systems along with the fundamentals of digital logic and machine architecture.

Proposed Catalog Description: Prerequisite: COMS 2703 and junior standing. This course covers the implementation of production operating systems, the fundamentals of digital logic, and machine architecture. This course does not count as credit toward a degree in Computer Science. ✓

l. **COMS 4013**

Proposed change: Change title;
Change prerequisite;
Change description to reflect different focus of course

Old Title: Operations Research

Old Description: Prerequisite: MATH 3153. A general coverage of the field of operations with discussion of the planning and control aspects of an OR study. Concentration of the basic models and analytical techniques of operations research, including mathematical programming and probabilistic models.

New Title: Quality Management in Information Technology

Proposed Catalog Description: Prerequisites: BUAD 2053 and COMS 4203. The study of quality management and quality assurance with regard to the analysis, design, development, and implementation of information systems and information technology. Topics include measurement techniques and standards, including ISO 9001 and other associated best practices regarding process management and process improvement. ✓

m. **COMS 4033 Systems Analysis and Design I**

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Proposed change: Rewrite description for readability

Old Description: Corequisite: COMS 4203. Students in this course will apply the concepts, tools, procedures, and techniques involved in the development of information systems. Emphasis is placed on the systems approach to problem-solving, user involvement, the management of quality, project control, and teamwork. pcc

Proposed Catalog Description: ~~Corequisite:~~ Prerequisite: COMS 4203. The application of concepts, tools, procedures, and techniques involved in the development of information systems. Emphasis is placed on the systems approach to problem solving, user involvement, the management of quality, project control, and teamwork. ✓

n. **COMS 4043 Systems Analysis and Design II**

Proposed change: Change prerequisite;
Rewrite description to clarify course focus

Old Description: Prerequisite: COMS 4033 and COMS 4133. A continuation of COMS 4033, with emphasis on the application of the theory and techniques of the previous course. Students will program, implement, and thoroughly document a complete system.

Proposed Catalog Description: Prerequisites: COMS 4033 and either COMS 4133, 4163, or 4313. A continuation of COMS 4033, with emphasis on the application of the theory and techniques covered in the previous course. Students will research, analyze, design, implement, test, and document a complete system. Students will complete and present their final system project as a team. ✓

o. **COMS 4053 Information Systems Resource Management**

Proposed change: Change prerequisite;
Rewrite description for readability

Old Description: Prerequisite: COMS 3803 and Junior standing in Information Science or Business. A study of the principles and concepts involved in the management of organizational maintenance of all information resources, including hardware, software, and personnel. Includes coverage of departmental functions within computer/information services, as well as legal, ethical, and professional issues, quality management, and the strategic impact of information systems.

Proposed Catalog Description: Prerequisite: Junior standing in information systems, information technology, or computer science. A study of the principles and concepts involved in the management of organizational maintenance of all information resources, including hardware, software, and personnel. Includes coverage of departmental functions within computer services and information systems. Additional topics include legal, ethical, and professional issues, quality management, and the strategic impact of information systems. ✓

p. **COMS 4063 IT Project Administration**

Proposed change: Add prerequisite;
Rewrite description to improve readability

Old Description: This course will provide a thorough introduction to the art and science of Project Management, as it is applied in the Information Technology industry. The course studies the theories and practices of project management, incorporating the practices used by the Information Technology Project Manager during the project life cycle, while exposing future analysts, developers, team leaders and IT managers to the needs and requirements of such functional areas of the organization as Finance, Marketing and Production.

Proposed Catalog Description: Prerequisite: Junior standing in information technology, information systems, or computer science. This course provides a thorough introduction to the art and science of project management, as applied in the domain of information technology. Theories, best practices, and tools of project management are studied in relation to the completion of a successful project life cycle. ✓

q. **COMS 4103 Organization of Programming Languages**

Proposed change: Change prerequisite

Old Description: Prerequisite: COMS 2213; COMS 2223 or COMS 3903. This course emphasizes the comparative structures and capabilities of several programming languages. Major emphasis will be placed on language constructs and the run-time behavior of programs.

Proposed Catalog Description: Prerequisites: COMS 2213 and COMS 2223. This course emphasizes the comparative structures and capabilities of several programming languages. Major emphasis will be placed on language constructs and the run-time behavior of programs. ✓

r. **COMS 4133 Application Program Development**

Proposed change: Rewrite description for clarification

Old Description: Prerequisite: COMS 2213 and COMS 2853. Methods for individual development of application programs. Metrics for measuring the quality of software products and processes. Verification of application programs.

Proposed Catalog Description: Prerequisites: COMS 2213 and COMS 2853. Object-oriented application development. Topics include OO Programming, three-tier design, and model-driven development. The course involves a major individual programming project. Students will develop and present their own large-scale application program. ✓

s. **COMS 4163 Personal Software Engineering**

Proposed change: Add prerequisite

Old Description: Formal methods for software specification. Program analysis, verification, and testing. Principles of software design. Objectoriented program implementation. Personal software process and product measurements. Program documentation. Software tools. Each student will implement a large application.

Proposed Catalog Description: Prerequisite: COMS 3213. Formal methods for software specification, program analysis, verification, and testing. Principles of software design are applied during the development and implementation of object-oriented programs. Topics include personal software process and product measurements, program documentation, and software tools. Each student will implement a large-scale application. ✓

t. **COMS 4603 System Programming**

Proposed change: Change prerequisite

Old Description: Prerequisite: COMS 4033 and COMS 3703 or COMS 3903. This course is intended to give the student practical experience in the implementation, modification, and maintenance of system software.

Proposed Catalog Description: Prerequisites: COMS 2213 and either COMS 3703 or COMS 3903. This course is intended to give the student practical experience in the implementation, modification, and maintenance of system software. ✓

u. **COMS 4700**

Proposed change: Change course title;
Change description

Old Title for Catalog: COMS 4700 Networking Laboratory

Old Description: Corequisite: Upper-level networking course. Laboratory exercises configuring computer networks.

New Title for Catalog: Data Communications and Networks Lab ✓

Proposed Catalog Description: Co-requisite: COMS 4703 Students will complete network lab exercises in support of COMS 4703. ✓

v. **COMS 4713 Heterogeneous Networks**

Proposed change: Change co-requisite lab course
Rewrite description to improve readability

Old Description: Prerequisite: COMS 4703. Corequisite: COMS 4700. The student will design, develop, implement and manage numerous heterogeneous networking operating system environments. The evaluation and development of needed policies and procedures are examined and developed, including the networking tools required for the development of a seamless heterogeneous networking system and environment.

Proposed Catalog Description: Prerequisite: COMS 4703. Co-requisite: COMS 4710. The student will design, develop, implement, and manage numerous heterogeneous networking operating system environments. Required policies and procedures are examined and developed. Networking tools required for the development of a seamless heterogeneous networking environment are studied and applied. ✓

w. **COMS 4981-3: Seminar in Computer and Information Science**

Proposed change: Change course title;
Change description to reflect title change

Old Title: COMS 4981-3 Seminar in Computer Science

Old Description: Prerequisite: Permission of department. A directed seminar in an area of computer science. Seminars will focus on topics relating to emerging technologies which are beyond the scope of other computer science courses. This course may be repeated for credit if course content differs

New Title: Seminar in Computer and Information Science

Proposed Catalog Description: Prerequisites: Permission of department. A directed seminar in an area of computer and information science. Seminars will focus on topics relating to emerging technologies which are beyond the scope of other computer and information science courses. This course may be repeated for credit if course content differs. ✓

x. **Number: COMS 4991-4**

Proposed change: Change course title

Old Title: Special Problems in Computer Science

Old Description: Prerequisite: Permission of department. This course will allow the student to work individually or as part of a small team to study and design practical computerized systems to solve problems of particular interest to the student(s). This course may be used to offer a variety of computer science related course work to strengthen the student's knowledge in areas not covered in other course offerings.

New Title: Special Problems in Computer and Information Science

Proposed Catalog Description: Prerequisites: Permission of department. This course will allow the student to work individually or as part of a team to study and design practical computerized systems in order to solve problems of a particular interest. This course may be used to offer a variety of subjects that strengthen the student's knowledge in areas not covered by other course offerings. ✓

Effective date or term: Spring 2009

*Course fees:

II. **Justification and feasibility of course:**

A. Completion of degree requirements? Who will take it?

To provide currency in the field of computer and information science. Students majoring in information systems, computer science, and information technology

will take these courses.

- B. How does it relate to other work being offered by your department? Is there an overlap with other courses in the department?

All courses are intended to be part of an integrated curriculum. No overlap.

- C. Is this course part of any general plan of development within your department? Explain.

All curriculum changes are part of a departmental plan to better communicate the objectives of the department.

- D. How often will the course be offered?

As needed

- E. How will the course be staffed?

Current faculty

- F. When applicable, state with which departments you have specifically coordinated this change? (If unable to identify coordinating departments that change affects, Academic Affairs can offer assistance in identifying course use.)

N/A

*Updated 8/1/04

**Updated 9/1/05